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THE IMPORTANCE OF EYE HEALTH IN OCCUPATIONAL THERAPY¹

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Time was when we comforted ourselves and eased our consciences for the ill fate of many of our fellow beings by an imaginary law of compensation. It was something of a tradition among the laity at least that a person deprived of the use of sight was compensated for his loss by increased hearing abilities and a more sensitive touch than his normally sighted brothers and sisters; that a person deprived of the sense of sound must have abnormally acute vision; that the cripple was blessed with an exceedingly fine disposition and that to such, patience was a God-given thing, making it possible for him to bear his suffering without complaint. Far from being true it is much more likely that the difficulty that affected one faculty may have affected others also, thus lessening the acuteness.

Gradually it has been borne in upon us that if the blind person happens to have unusual acuteness of hearing it is not because any law of compensation provided him with this in lieu of his loss but because in the hard school of learning, to do without one faculty he had to train, through experience, those faculties left to him to carry an extra responsibility. In time, too, a few began to recognize the lack of this supposedly divine law compensating for some deprivation and there grew, at first very feebly and with but little nurturing, a human law of compensation, a law taking cognizance of the fact that facilities must be provided in the case of all handicaps for the best use of the faculties that are left. Helen Keller, out of the depth of her own

¹ Given at the meeting of the New York State Occupational Therapists, May 18, 1929.

great experience epitomized this feeling. "It is not," she wrote, "their blindness that is the curse of the blind; it is their idleness." Quite recently in an actual asylum for the blind in one of our neighboring island possessions young and old blind people were living together with folded hands, wretched in spite of fairly comfortable surroundings because they were allowed no part in the activities of life.

In these days that which is of greatest value in any particular line is insured: the musician insures his fingers; the dancer, her feet; the singer, his voice. Is it not quite as necessary that the handicapped shall have insured for them those faculties which they can use so that, as far as possible, some substitution may be made for those that are non-existent? In occupational therapy there should be found something of this assurance of insurance for the full use of what it is possible to employ, whether the potentialities be great or small.

Therapy, in its broadest sense, is the science of healing whether that healing be of the mind, the soul or the body. Occupational therapy develops this idea along a particular line using occupations as a factor in the healing process, whether that healing be the actual healing of the affected part or faculty or a training for the use of the substitute faculty.

Surely occupational therapists, before they can render service in this science of healing, must have at least a workable understanding of the difficulties under which their patients are laboring. The true occupational therapist possesses that fundamental quality of all real teachers that George Herbert Palmer so well expresses as the aptitude for vicariousness, the ability to put oneself into the place of the other.

Recently two cases have come to attention that will illustrate the point. These are a brother and sister born totally deaf. In considering the possibility of education it was quite natural that lip-reading should be of paramount importance. The facilities for this were earnestly sought and obtained but no thorough medical examination was made nor was there any care taken to preserve the other senses. So great was the attention directed toward the disability of deafness that it was not until the boy was

seventeen that anyone, least of all himself (because of gradual decrease), noticed that he was having great difficulty in seeing. An examination showed a very serious eye condition resulting from the same disease that had caused the deafness, inherited syphilis, and a mental test showed a gradually decreasing mental ability probably a part of the whole degenerative process. In a short space of time this boy will undoubtedly be totally blind. The sister is much younger but even in the face of this experience the mother was shocked at the suggestion that it would be most advisable to have a thorough physical examination for this child. When she finally gave her consent it was found that the little girl had the same eye difficulty as that from which the boy was suffering but that, as it was discovered so much earlier, there is some hope of arresting it for a time at least. In occupational therapy undertaken for both these children only the deafness had been considered and much of it that was undertaken might readily have increased the eye trouble. Aside from the fact that every person both child and adult should have a thorough physical examination, if these children, when they were first discovered to be deaf had been examined as to the cause, and other possible results had been taken into consideration two things might have happened: first, they might not be in their present condition because something might have been done to arrest the eye difficulty and what is particularly to the point of the discussion, training, whether mental or occupational, would have taken into consideration their eye defects and different methods would have been used.

Since sight is the chief avenue of educational approach to the brain it should, if possible, be kept normal. If there is any eye handicap it should be given the most careful consideration in selecting the type of occupational therapy to be used and the conditions under which it is to be used.

Every occupational therapist of any wide experience will doubtless come into contact at one time or another with four groups of eye types. First, those having so-called normal sight meaning a freedom from diseases of the eye or of general health conditions that may effect the eyes and a visual acuity of approximately

20/20ths, that is, eyes that are able to read the line marked 20 foot on a correctly lighted Snellen chart at a distance of 20 feet. This fortunately is by far the largest group, probably 80 per cent of an unselected group; second, a group composed of probably 19 of the remaining 20 per cent having slight eye defects that can be corrected or cured and so brought up to normal use for all practical purposes; third, a group composing a fraction of 1 per cent having such serious eye defects that neither correction nor treatment will bring them into the normal group, and, fourth, a still smaller fraction of 1 per cent, approximately one person in every one thousand of the general population, who will be blind.

What is the responsibility of the occupational therapist toward each of these groups?

Seeing is quite a different thing from vision. A person may have perfect vision but be unable to see either because there is no light to send to the brain the impression of that which is outside the eye or because some lack in the brain makes it impossible for that organ to interpret the message. Three things are really necessary then to see: the eyes with which to see, the light by which to see and the brain with which to interpret the message.

In cases of normal vision, the occupational therapist must not only select the type of work that the particular handicap makes possible, but must bring to this work, light, without which the eyes cannot function. In some forms of occupational therapy this is one of the most difficult problems of solution and is particularly true in the case of bed patients.

Light, to be efficient, must have three attributes; it must be adequate for the purpose for which it is to be used, it must be well diffused and must essentially be without glare. The old time hospital with its shining white walls and ceiling is blessedly becoming a thing of the past. There was no eye rest when these conditions prevailed and it was almost impossible to prevent eyestrain whether artificial or natural light was used. These irritating conditions reacted upon the patients. At present walls are toned in ivory or light buff, in dull finished paints. These are cheerful, clean and non-irritating. They give the full value of the light without glare. Buff colored translucent shades, two

for each window, hung at the center so that one pulls up and the other down will admit sunlight but at the same time diffuse it. They will also allow for ventilation at the top and bottom of the window without the blowing of the shade so irritating to all people but particularly so to sick ones. At the same time they will permit light to enter from the top of the window from which the best light comes. Even with the best light, the use of vision must be considered. Facing the light is not to be thought of. The light should come from above, over the left shoulder since it is to see by and not to look at. The placing of the chair or bed at a slight angle away from the window will give the best results. For artificial lighting a totally enclosing globe of low brilliance hung fairly close to the ceiling will give the best diffusion provided there is sufficient wattage to allow an ample light by which to work. A little decoration in faint brown lines helps to prevent glare, especially when the globe is unlighted. We are speaking, of course, of the time when occupational therapy is being carried out; when patients are not using their eyes and rest is required, a shaded wall light or bed lamp may be all that will be necessary, but for work of any description or play needing the use of the eyes there must be adequate light, properly diffused and without glare whether this be natural or artificial, in the hospital, the home or the school. Eyestrain causes fatigue and since the eye is a part of the body, eye fatigue reacts on the general condition. The result of eyestrain may be headache, nausea, irritability, lassitude, eyeache, inattention, lack of concentration, or a host of other difficulties. Hence work or play under these conditions cannot be classed as occupational therapy, since therapy is the science of healing; such conditions are in reality adding greater difficulties rather than helping to heal those that already exist.

For a patient who must lie on his back it would seem inadvisable to undertake activities that require the close use of the eyes since in this position it is most difficult to get correct use of light. This is an unnatural position for eye use. A patient who is able to sit upright or even to have the bed lifted to an angle may, with the use of an overhead light as previously suggested or a bed light attached to his bed (provided it meets the conditions of

good lighting), be able to use his eyes with comfort. Sometimes nothing more than a slight adjustment is necessary to make the difference between adding a handicap and helping to overcome the one that exists.

For occupations requiring any reading, eye comfort will be greatly increased and the possibility of fatigue greatly reduced if a table that lifts to an angle can be used since this does away with the necessity for bending over a flat surface. There are many such devices on the market especially arranged for the handicapped, but care must be exercised in selection to obtain one in dull finish otherwise reflected glare will result.

The time element in using the eyes for close work must also be considered. In cases where there is any disease, fatigue is more quickly felt even though the eyes are normal. Eyes were intended to be used but not abused and eye fatigue has a very rapid effect on the whole system. The true occupational therapists will bear in mind that since the sight is the highroad of educational approach, keeping this free for traffic is an essential part of therapy.

Considering the second group, those with some slight eye defect or disease that can be corrected or cured, it is essential that this be done before close eye work is undertaken. Glasses may be needed in which case it may be a part of the occupational therapist's work to encourage their use after they have been obtained. It may be that treatment is necessary; the occupational therapist will exercise the greatest care in seeing that eyes are not used when they are sick. Of course this group needs the same attention to lighting and placement conditions that must be afforded those with normal sight.

The occupational therapist who works with patients having serious defects of vision has indeed a great responsibility and must have a practical understanding of the limitations occasioned by such. There are three types of eye defects; an eye may be too long from front to back causing near-sight or myopia; an eye may be too short from front to back causing hyperopia or a difficulty of seeing things at near range; an eye may have a defect in the shape of the cornea or lens causing the rays of light to

focus at many places instead of one thus causing astigmatism. In many cases, these difficulties are slight and the vision can be brought up to normal by proper correction, but where this cannot be done such occupations as are selected to be therapeutic must be adapted to the conditions. The most serious of these difficulties is probably myopia of such a high degree as to suggest a progressive condition. People suffering from this defect are shut out from many things, particularly outdoor sports and games requiring close use of the eyes. Since they can see anything, no matter how small it is, provided it is brought close enough to the eyes, there is a tendency for them to become studious and the fact that they all too often bring their eyes to the work rather than the work to their eyes causes a bending over position which may result not only in narrow chests and rounded shoulders, but may cause a congestion in the front of the eye that softens the tissues and causes the eye to stretch still further, thus adding to the difficulty. For such people the type of work chosen must be such as can be done at a distance of from 12 to 14 inches from the eyes and only short periods of close eye work should be permitted. Myopic people require exercise as do others, but this should not be violent, such as bending over exercises, diving, etc., for by these, the already thinned retina may become detached. Since concentration is usually one of the attributes of the myope the tendency is to undertake too intensive and too detailed work. Such people should be encouraged to live more in the open if this is possible.

People having the second defect, an eye too short from front to back of such degree that it cannot be satisfactorily corrected do not, as many people suppose, see objects at a distance better than do the normally sighted. They merely see things at a distance better than those at close range. The tendency is to hold objects at too great a distance from the eyes and since the inner muscles of the eyes, the ciliary, are constantly working to try to see things at a nearer focus there is a strain which is apt to react on the general health. Such people are likely to have far less concentration than do myopes and to be irritable rather than placid. A great deal of patience is required if anything is to be

accomplished. Forced attention for short periods may be necessary but care must always be taken that this is not carried too far or there may result an increase in the irritability or in the general nervous condition.

Astigmatism also places a strain upon the ciliary muscles. A person with a high degree of this difficulty that cannot be corrected is constantly using his ciliary muscles to try to bring the rays of light to a focus at one place instead of many. To give such a person weaving as an occupation is to torture him, since in an uncorrected condition of this kind lines appear to waver and nausea is almost always the result.

If diseases of the eye are in an acute condition there would, of course, be no close use any more than the rest of the body would be expected to work when it is ill. There may, however, be static conditions such as scars on the eye or congenital cataracts that will not be increased by close use of the eye even though the vision is very low. In such cases as these, the occupational therapist will do well to remember that it actually takes such people longer to see. Hence great patience is required and while there is little possibility of eyestrain, the general health may be affected by fatigue caused by too long periods of work.

Again, there is another consideration that must be in the minds of the occupational therapist, age grouping. Every normally sighted child is born hyperopic. He is following the development of the race. When people lived in the open and depended for their safety and their food on being able to see at a distance the eye was adapted for this living. When changes in the art of living brought people indoors not only was the light supply cut down at least one thousand fold but close eye use increased at the same rate. It is small wonder that the eyes have not adapted themselves to this change in a period of time which is short biologically and that eye difficulties are common. The young child's eye gradually changes from a shape that is too short from front to back to a more nearly spherical shape. This process probably goes on for six or seven years from birth, hence the young child sees things much better at a distance than at close range. If he is in the handicapped class, although his eyes

are normal for his age, occupation requiring close use of the eyes will not be therapeutic. It will be noticed that kindergartens have been changing their methods within the last few years to meet this new understanding and that many of the original gifts and occupations are being discarded because they require close use of the eyes. Free-hand paper cutting, modeling with plasticine and, if possible, the working out of interesting projects on the sand table, are always of interest to these little people and there is no fear of eyestrain resulting. Care must, of course, be taken that blunt scissors are used so that there will be no possibility of eye injury. Large pictures and construction blocks hold their interest without causing eyestrain. For children of school age the occupational therapists will do well to have motivated activities such as are suggested by their academic work. Most children, whether they be normally or abnormally sighted can make blue prints provided they are not bedridden. A book of blue prints made to illustrate nature work is of endless interest because there is always something to learn; the trees or flowers of a vicinity, bird cut-outs, etc., all of these form a source of motivated handwork that should be therapeutic to the soul as well as to the mind and body.

Occupations must also be adapted to patients of middle life. Here again eye difficulties are likely to present themselves. Changes in the lens prevent its responding to the call of the muscles and what is known as presbyopia results. This is a time when people are often not conscious that there is an eye difficulty but feel that somehow or other their arms must have grown shorter because they cannot hold the things far enough away to be able to see them well. The great majority of people over forty-five need glasses to help to correct this curious shortening of the arms. This is a time, too, when that insidious disease, glaucoma, a hardening of the eyeball, may get in its bad work, often without the warning of pain. A little later cataract may steal away the light from the eyes of the old and the hands must have something to do that will require less and less sight, at least until such time as the cataract becomes operable when some part of vision may be restored.

Books for tired eyes arranged on a special shelf by most libraries are printed in large clear type with good spacing. These help to hold the interest during these gradually relinquishing years. Occupations that require little more than the sense of touch will prove satisfactory.

A good therapeutic occupation for ages above the fifth year at school will be the touch system of typewriting, but this must be really the touch system and not a make believe, otherwise the strain may be great.

There is finally the small group of blind persons for whom occupational therapy must be considered. In many ways the solution of this problem is harder than with people who have at least some sight, because in the latter there is always hope, but in another way it is easier, because there is rather a definite dividing line between the things the blind are able to do and those that require sight. There are many things that they can do quite as well as sighted people. When the occupational therapist has determined what can or cannot be done there is no anxiety about eyestrain, as in the case of all the other three groups. Sewing, basketry, carpentry, copper and bent iron work and many other occupations that cannot be undertaken by those with seriously defective vision may be most therapeutic for those who cannot see. The most difficult case for the occupational therapist in this group is the newly blinded person. For such those who would help must cope with that despair that is almost a universal concomitant of a knowledge that the light is gone forever. She must reëducate the sense of touch and the sense of hearing and must help to supply that sixth sense that must be developed to take the place of the one destroyed.

And what of the occupational therapists? If they can make the lame walk with their brains, the blind to see with their fingers, those with undeveloped mental ability to use the cells that are left to their full capacity,—if they can catch and hold, even for a short space of time, the mind and will-power of the paranoiac so that he touches for a moment the realities of life, or open to the cardiac and to the tuberculous, possibilities of happiness and usefulness, then indeed have they become dispensers of true therapy, the science of healing.

